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TRANSMITTAL LETTER FOR REVISED APPEAL BRIEF

In re patent application of:	)	MMB Docket No.: **1007-0564**
Inventors: **Astrauskas et al.**	)	Emerson Docket No.: **M-7371**
Serial No.: **10/628,700**	)	Group Art Unit: **2838**
Filed: **July 28, 2003**	)	Examiner: **Edward H. Tso**
Title: **Method and Apparatus for Conserving Battery for Operation of a Low Intensity Optical Communication Probe**	)	Confirmation No.: **6235**

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

May 9, 2007
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David M. Lockman
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Signature of person mailing Document or Fee

May 9, 2007
Date of Signature

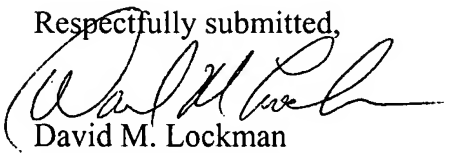
LETTER

Sir:

Enclosed is a Second Appeal Brief in connection with the above-identified patent application. This brief is being filed in Response to an Office Action mailed on December 12, 2006. A Notice of Appeal was filed on March 9, 2007. No fee is owed because a check in the amount of $500.00 has already been paid for the previously filed Appeal Brief. Should the previously paid fee be deficient in amount or any extension of time be necessary for the filing of this Notice of Appeal, please charge any fees which

may be due to Deposit Account No. 13-0014, but do not include any payments of issue fees.

Respectfully submitted,



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re patent application of:	)	MMB Docket No.: **1007-0564**
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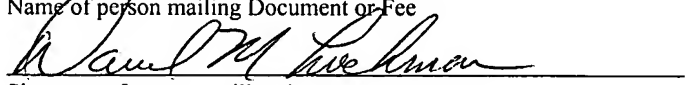
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SECOND BRIEF ON APPEAL

Hon. Commissioner of Patents and Trademarks
Alexandria, VA 20231

Sir:

This is an appeal under 37 CFR § 41.31 to the Board of Patent Appeals and Interferences of the United States Patent and Trademark Office from the rejection of claims 1-2, 4-6, 8-13, and 16-20 of the above-identified patent application. These claims were rejected in an Office Action dated December 12, 2006. Although the decision was not a final action, the

Office Action was issued in response to Applicants' appeal brief that had been filed on September 21, 2006. Thus, the Office Action mailed on December 12, 2006 was an attempt by the Examiner to reopen prosecution on the merits with regard to claims 1-2, 4-6, 8-13, and 16-20. The Examiner has rejected these claims under 35 U.S.C. 103(a) as being unpatentable over Baur and unsubstantiated obvious teachings and motivations. As the claims were finally rejected in a prior office action and were on appeal at the time that the Examiner re-opened prosecution, Applicants may elect to continue the appeal by filing another Notice of Appeal and Appeal Brief. *37 C.F.R. 41.31 and 41.37.*

No fee is being tendered with this Appeal Brief as a check in the amount of $500.00 has already been paid for the previously filed Appeal Brief. Should the previously paid fee be deficient in amount or any extension of time be necessary for the filing of this Notice of Appeal, please charge any fees which may be due to Deposit Account No. 13-0014, but not to include any payment of issue fees.

(1) REAL PARTY IN INTEREST

Emerson Electric Co. of St. Louis, Missouri is the assignee of this patent application, and the real party in interest.

(2) RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences related to this patent application (serial no. 10/628,700), other than the appeal that was terminated by the Office Action mailed on December 12, 2006. This appeal is in response to that Office Action.

(3) STATUS OF CLAIMS

Claims 1-6, and 8-20 are pending in the application. In the Office Action mailed December 12, 2006, claims 1-2, 4-6, 8-13, and 16-20 were rejected. Objection was made to claims 3, 14, and 15, but these claims were indicated as being allowable if rewritten to include the limitations of any rejected base claim and intervening claims. The action on these claims is not being appealed. Claim 7 has been canceled. Claims 1-2, 4-6, 8-13, and

16-20 are being appealed. Each of the appealed claims 1-2, 4-6, 8-13, and 16-20 is shown in the Appendix attached to this Appeal Brief.

(4) STATUS OF AMENDMENTS

Appellant has filed no amendments subsequent to the Final Office Action mailed March 15, 2006.

(5) SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 is directed to a battery pack for powering a communication probe that is used for optical communication between an external device and a diagnostic tool. The battery pack is located within a housing and coupled to the diagnostic tool through a cable. The battery pack includes at least one battery and a switch. The switch selectively couples the battery in the battery pack to the communication probe in response to a power status signal from the diagnostic tool. When the power status signal indicates the diagnostic tool is in a sleep mode, the switch disconnects the battery from the communication probe. When the power status signal indicates the diagnostic tool is operating, the switch connects the battery to the communication probe to enable optical communication between an external device proximate the communication probe and the diagnostic tool. (Specification, page 70, lines 1-16; FIG. 20). The positive and negative interconnect of dependent claims 6 and 12 is shown in FIG. 21 and described at page 71, lines 14-20.

Independent claim 8 is directed to a method for conserving power in a battery that powers a communication probe that is used for optical communication between an external device and a diagnostic tool. The method includes reception of a power status signal that indicates whether a diagnostic tool is in active or sleep mode. A battery is selectively coupled to a communication probe for bi-directional optical communication in response to the power status signal indicating the diagnostic tool is in the active mode (Specification, page 70, lines 10-16, and page 71, lines 8-12).

Independent claim 13 is directed to a diagnostic system for an appliance. The diagnostic system includes a diagnostic tool that generates a power status signal indicating whether the diagnostic tool is in an active or sleep mode (Specification, page 63, lines 1-10, and page 70, lines 10-16). A low intensity optical communication probe for bi-directional optical communication with an external device is also part of the system (Specification, page 63, line 11 to page 64, line 6). A battery for powering the low intensity communication probe and a switch for selectively coupling the battery to the communication probe in response to the power status signal indicating the diagnostic tool is in an active mode are also included (Specification, page 70, lines 1-16).

Independent claim 18 is directed to a method for enabling optical communication between a diagnostic tool and a communication probe. The method includes powering a low intensity optical communication probe with a battery to enable bi-directional optical communication with a device external to the optical communication probe and the selective decoupling of the battery from the optical communication probe in response to a power status signal generated by a diagnostic tool that indicates the diagnostic tool is in a sleep mode (Specification, page 70, lines 17-22).

(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Ground of Rejection

The ground of rejection to be reviewed on appeal is whether Baur et al. (U.S. Publ. No. 2003/0137279) renders the methods and systems of claims 1-2, 4-6, 8-13, and 16-20 unpatentable under 35 U.S.C. 103(a). These claims require the selectively coupling of a battery to an optical communication probe with reference to a power status signal from a diagnostic tool. The optical communication probe is powered for the purpose of bi-directional communication between a device external to the probe and the diagnostic tool.

(7) ARGUMENT

Section 103 Ground of Rejection

CLAIMS 1-2 and 4-5

Claim 1 requires a battery housing having a battery for powering an optical communication probe, a cable for coupling data signals between the battery housing and a diagnostic tool that is external to the housing, and a switch within the housing that selectively couples the battery to the optical communication probe in response to a power status signal from the diagnostic tool. Baur fails to teach or suggest a switch in a battery housing that responds to a power status signal from a diagnostic tool to couple a battery in the housing to an optical communication probe.

The Examiner's interpretation of Baur fails to appreciate the interaction between the switch in a battery housing, an optical communication probe, and a diagnostic tool. The Examiner explains that the electrical load 2 of Baur equates to the optical communication probe of claim 1. *Office Action*, page 2, last paragraph. The Examiner also states that the switch 8 is coupled to a status signal that indicates "whether the load is in an active or inactive mode." *Office Action*, page 2, penultimate paragraph. Thus, the Examiner admits that Baur teaches a switch in the load is coupled to *an electrical load* status signal. This structure cannot render Applicant's structure obvious because it requires the switch to respond to a power status switch for *a device other than the load.* Consequently, Baur teaches away from the invention of claim 1 which requires the switch to be coupled to a power status signal from a diagnostic tool for the purpose of delivering electrical power to an optical communication probe. Instead, Baur, according to the Examiner, teaches that a switch in the electrical load is coupled to a power status signal from the electrical load. Assuming this teaching is true, although Applicants dispute this interpretation below, it cannot render claim 1 obvious because it fails to suggest a switch in a battery housing that responds to a power status signal for a device other than the load.

The Examiner's interpretation of switch 8 in Baur is wrong because switch 8 is not coupled to a power status signal. Switch 8 is an operator manipulated switch for turning the load on and off. *Baur*, paragraph 27, lines 11-17. Therefore, switch 8 does not

respond to a power status signal, but rather *generates* a power status signal, which is coupled to the control electronics of the electrical load. Rather than respond to a power status signal as required by claim 1, switch 8 responds to operator manipulation. Because switch 8 is manually operated, it does not "deliver electrical power from the battery to the communication probe *in response to the power status signal from the diagnostic tool*" (emphasis added) as required by claim 1. Consequently, the switch 8 of Baur and the switch of claim 1 do not operate in a similar manner and claim 1 is patentable over Baur.

As noted above, the Examiner failed to argue an interpretation of Baur that is supported by the teachings of the reference. The Examiner's description of the teachings of Baur is rather sparse, so other alternatives are considered. Because claim 1 requires the switch to be within the battery housing, the embodiments of FIGS. 2 and 3 in Baur are not applicable as those embodiments do not possess a switch in the battery housing. With respect to FIG. 1, a switch 11 is shown within the battery housing. Switch 11, however, does not "deliver electrical power from the battery to the communication probe in response to the power status signal from the diagnostic tool." Instead, switch 11 delivers power from the battery to the monitoring circuit 9. *Baur*, paragraph 31, lines 9-18. Switch 11 performs this operation in response to a power status signal from *the electrical load*, which is argued by the Examiner to be the optical communication probe. Thus, switch 11 does not operate as required by claim 1 for a number of reasons. For one, switch 11 responds to the optical communication probe, rather than the diagnostic tool as required by claim 1. For another, switch 11 does not respond to a power status signal from a diagnostic tool to supply power to the load. Switch 8 supplies power to the electrical load, but it does not perform that function in response to any power status signal. Thus, according to the Examiner, Baur teaches that the electrical load (optical communication probe) provides an optical communication probe power status signal to a switch within a battery housing to supply power to a monitoring circuit in the battery housing. Assuming that the monitoring circuit is a diagnostic tool, which is contrary to the actual teachings of Baur, the arrangement of Baur would teach away from the invention as such a construction is the *reverse* arrangement of claim 1. If the monitoring circuit is assumed to be the device external to the optical communication probe, despite any evidence

supporting such an assumption, it still does not suggest the claimed invention because the battery in claim 1 does not power the external device. Consequently, switch 11 of Baur, even if interpreted using unsupported assumptions, does not teach or suggest the switch set forth in claim 1. For at least these reasons, the section 103 ground of rejection asserted against claim 1 should be reversed.

Claims 2 and 4-5 depend from claim 1. Thus, these claims include the limitations of claim 1 and are patentable for the reasons discussed above with respect to claim 1.

Claim 6

Claim 6 depends from claim 5. Thus, claim 6 includes the limitations of claims 5 and 1 and is at least patentable for the reasons discussed above with respect to claim 1. Moreover, claim 6 requires a positive and negative interconnect for directly coupling the battery to the communication probe. As admitted by the Examiner, Baur does not disclose an optical communication probe. *Office Action*, page 2, last paragraph. To cover this absence, the Examiner submits the generic load of Baur could be an optical communication probe. Such a hypothesis does not also require a positive and negative interconnect for the directly coupling the battery to the communication probe. Nevertheless, the Examiner fails to point to any teaching within Baur or outside Baur regarding a positive and negative interconnect. If the Examiner meant to reference the conductors 5 and 6 of Baur, they do not comport with Applicants' description of an interconnect for direct coupling as described in Applicants' specification at page 71, lines 14-23. Consequently, the record is devoid of any evidence supporting the modification of the electrical energy supply device of Baur with a positive and negative interconnect as required by claim 6. Therefore, claim 6 is patentable over Baur.

Claims 8-10

Claim 8 is a method claim that requires receipt of a power status signal from a diagnostic tool and the selective coupling of a battery to an optical communication probe to power the probe for bi-directional optical communication with a device that is external of the communication probe. The coupling of the battery to the probe is performed in response

to the power status signal from the diagnostic tool. Again, the Examiner relies upon Baur alone as support for the section 103 ground of rejection that claim 8 is obvious.

The Examiner's reliance on Baur is misplaced. Baur not only fails to disclose an optical communication probe, as admitted by the Examiner, but it also fails to disclose a diagnostic tool or a device external to an optical communication probe with which bi-directional communication is performed using the powered communication probe. The Examiner has stated that the load of Baur is the communication probe. Taken that statement as being true for purposes of argument only, the power status signal generated by the system in Baur comes from the communication probe, and not from a diagnostic tool. Moreover, Baur is completely silent regarding the purpose for powering a communication probe as required by claim 8, namely, bi-directional optical communication with a device that is external to the communication probe. For at least these reasons, the Examiner's section 103 ground of rejection of claim 8 is unsupported by evidence in the record and the rejection of claim 8 should be reversed.

Claims 9-10 depend from claim 8 and, therefore, they contain the limitations of claim 8. For at least the reasons set forth above with respect to claim 8, claims 9-10 are also patentable.

Claim 11

Claim 11 depends from claim 8 and, therefore, it contains the limitations of claim 8. For at least the reasons set forth above with respect to claim 8, claim 11 is also patentable. Moreover, claim 11 requires that the battery be selectively coupled to the communication probe through a cable. Baur fails to teach or suggest that the conductors 5 and 6 that connect the battery 3 to the load 2 are contained within a cable. A cable enables flexible manipulation of the communication probe for bi-directional optical communication with the device external to the communication probe. Baur also fails to teach that the load may be selectively coupled to the battery source through a cable or other device that may be selectively coupled between the load and the battery. Therefore, the Examiner's

assertions that claim 11 is obvious are unsupported. For at least these reasons, claim 11 is patentable over Baur.

Claim 12

Claim 12 depends from claim 8 and, therefore, it contains the limitations of claim 8. For at least the reasons set forth above with respect to claim 8, claim 12 is also patentable. Moreover, claim 12 requires that the battery be selectively coupled to the communication probe through a positive and negative interconnect. Baur fails to teach or suggest that the conductors 5 and 6 that connect the battery 3 to the load 2 form a positive and negative interconnect. The Examiner fails to point to any teaching within Baur or outside Baur regarding a positive and negative interconnect. If the Examiner meant to reference the conductors 5 and 6 of Baur, they do not comport with Applicants' description of an interconnect for direct coupling as described in Applicants' specification at page 71, lines 14-23. Consequently, the record is devoid of any evidence supporting the modification of the electrical energy source of Baur with a positive and negative interconnect as required by claim 12. Baur also fails to teach that the load may be selectively coupled to the battery source through an interconnect or other structure that may be selectively coupled between the load and the battery. Therefore, the Examiner's assertions that claim 12 is obvious are unsupported. For at least these reasons, claim 12 is patentable over Baur.

Claims 13 and 16

Claim 13 is an independent claim directed to a system having a diagnostic tool, a low intensity optical communication probe, a battery, and a switch that selectively couples the battery to the communication probe in response to the state of a power status signal generated by the diagnostic tool. For reasons similar to those discussed with reference to claims 1 and 8, Baur fails to render obvious the delivery of electrical power from the battery to the optical communication probe through a switch that responds to a power status signal from the diagnostic tool. Baur, as noted above, does not teach or suggest a diagnostic tool. Consequently, it cannot render obvious a switch that responds to a signal from a diagnostic tool for the delivery of power to an optical communication probe. Baur only teaches that the communication probe generates a power status signal, if one buys

the Examiner's proposition that the load of Baur is an optical communication probe. Adoption of this proposition means that the battery pack receives a power status signal from the communication probe, and not from the diagnostic tool, as required by claim 13. Additionally, Baur does not provide power to the load (communication probe) in response to the power status signal from the load (communication probe). Even if it did, it still would not render obvious a system in which power is delivered from the battery to the optical communication probe through a switch that responds to a power status signal from a diagnostic tool. For at least these reasons, claim 13 is patentable over Baur. Claim 16 depends from claim 13 and, therefore, includes the limitations of claim 13. Thus, claim 16 is also patentable over Baur.

Claim 17

Claim 17 depends from claim 13 and, therefore, includes the limitations of claim 13. Thus, claim 17 is also patentable over Baur. Additionally, claim 17 requires that the battery and switch be mounted in a housing and that the housing be directly coupled to the diagnostic tool. As already noted, Baur is silent regarding a diagnostic tool. Thus, Baur cannot teach or suggest the direct coupling of a battery housing in a diagnostic tool as required by claim 17. Therefore, claim 17 is patentable over Baur.

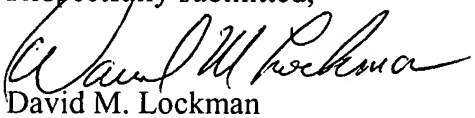
Claims 18-20

Claim 18 is an independent claim that is directed to a method for decoupling a battery from a low intensity optical communication probe in response to a power status signal generated by a diagnostic tool indicating the tool is in a sleep mode. Baur cannot teach or suggest the decoupling of a battery from a low intensity optical communication probe in response to a power status signal generated by a diagnostic tool because it has no teaching regarding a diagnostic tool. Indeed, Baur only teaches the battery pack and a load. There is no third entity in Baur to correspond to a diagnostic tool without creative impermissible hindsight reconstruction of the components in the battery pack and load. Consequently, claim 18 is patentable over Baur. Claims 19-20 depend from claim 18 and are patentable for essentially the same reasons.

CONCLUSION

As set forth above, the Examiner has failed to identify any suggestion in Baur to provide a switch in a battery housing that responds to a power status signal from a diagnostic tool to couple selectively a battery to an optical communication probe. Additionally, no teaching or suggestion has been identified for support that a cable be used to couple a battery to an optical communication probe. Finally, the Examiner ignored the positive and negative interconnect of claims 6 and 12 that directly couples an optical communication probe to a battery housing and failed to provide any basis for concluding that direct coupling through this structure is obvious in light of the generic description of conductors being used to couple a battery to an electrical load in Baur. The Board of Appeals, therefore, is respectfully requested to reverse the rejection of pending claims 1-2, 4-6, 8-13, and 16-20.

Respectfully submitted,



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(8) CLAIMS APPENDIX

Claim 1: A battery pack for powering a communication probe used for optical communication between an external device and a diagnostic tool comprising:

a battery housing having at least one battery for powering an optical communication probe;

a cable for coupling data signals between the battery housing and a diagnostic tool that is external to the battery housing; and

a switch within the housing for selectively coupling the battery to the optical communication probe to deliver electrical power from the battery to the communication probe, the switch being coupled to power leads of the battery and also being coupled to a power status signal provided to the switch through the cable coupling the battery pack and the external diagnostic tool, the power status signal indicating whether the diagnostic tool is in an active or sleep mode, the switch selectively couples the battery to the optical communication probe to deliver electrical power from the battery to the communication probe in response to the power status signal from the diagnostic tool indicating the diagnostic tool is in an active mode.

Claim 2: The battery pack of claim 1 further comprising:

a battery charger circuit coupled to the battery, the battery charger circuit being adapted to couple to an AC power source so the battery charger may be used to re-charge the battery when the battery charger circuit is coupled to the AC power source.

Claim 3 (not being appealed).

Claim 4: The battery pack of claim 1, wherein the battery is a lithium battery.

Claim 5: The battery pack of claim 1, wherein the battery is a disposable battery.

Claim 6: The battery pack of claim 5 further comprising:

a positive and negative interconnect for directly coupling the battery to the communication probe; and

the switch selectively couples the battery to the positive and negative interconnect in response to the power status signal being active.

Claim 7 (canceled).

Claim 8: A method for conserving power in a battery that powers a communication probe used for optical communication between an external device and a diagnostic tool comprising:

receiving a power status signal from a diagnostic tool, the power status signal indicating whether the diagnostic tool is in an active or a sleep mode; and

selectively coupling a battery to an optical communication probe to power the communication probe for bi-directional optical communication with a device that is external of the communication probe in response to the power status signal from the diagnostic tool indicating the diagnostic tool is in an active mode.

Claim 9: The method of claim 8 further comprising:

re-charging the battery from an external AC power source.

Claim 10: The method of claim 8 further comprising:

generating the power status signal that indicates the diagnostic tool is in an active mode in response to user activity at the diagnostic tool.

Claim 11: The method of claim 8, wherein the battery is selectively coupled to the communication probe through a cable.

Claim 12: The method of claim 8, wherein the battery is selectively coupled to the communication probe through a positive and negative interconnect.

Claim 13: A diagnostic system for an appliance comprising:

a diagnostic tool that generates a power status signal indicating whether the diagnostic tool is in an active mode or a sleep mode;

a low intensity optical communication probe for bi-directional optical communication with an external device;

a battery for powering the low intensity optical communication probe;

a switch for selectively coupling the battery to the low intensity optical communication probe to provide power from the battery to the communication probe, the switch selectively coupling the battery to the communication probe in response to the power status signal generated from the diagnostic tool indicating the diagnostic tool is in the active mode.

Claims 14 and 15 (not being appealed).

Claim 16: The system of claim 13 further comprising:

a re-charging circuit for converting AC power to a form for re-charging the battery.

Claim 17: The system of claim 13 further comprising:

a housing in which the battery and switch are mounted, the housing being directly coupled to the diagnostic tool.

Claim 18: A method for enabling optical communication between a diagnostic tool and a communication probe comprising:

powering a low intensity optical communication probe with a battery for bi-directional optical communication with a device that is external of the optical communication probe; and

selectively de-coupling the battery from the low intensity optical communication probe in response to a power status signal generated by a diagnostic tool indicating the diagnostic tool is in sleep mode.

Claim 19: The method of claim 18 further comprising:

generating the power status signal in response to user activity at the diagnostic tool.

Claim 20: The method of claim 18 further comprising:

converting AC power to a form for re-charging the battery; and

applying the converted AC power to the battery to re-charge the battery.

(9) EVIDENCE APPENDIX

No evidence was submitted under rules 1.130, 1.131, or 1.132. Additionally, no other evidence has been entered in the record by the Examiner upon which the Applicants rely.

(10) RELATED PROCEEDINGS APPENDIX

No proceedings were identified in the Related Appeals and Interferences presented above. Therefore, no decisions of a court or the Board are contained herein.